

Comparisons of Job Characteristics

Focus Occupation: [Civil Engineering Technicians \(17-3022\)](#)

Associated Occupation: [Architectural and Engineering Managers \(11-9041\)](#)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 78

Focus Occupation: Civil Engineering Technicians (17-3022)

Associated Occupation: Architectural and Engineering Managers (11-9041)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Engineering and Technology	5.7	23.2	15.6	<<	Extensive education and/or training may be required
Design	5.2	19.0	14.1	<<	Extensive education and/or training may be required
Mathematics	9.2	17.4	15.0	<	Expanded education and/or training may be required
Computers and Electronics	8.4	16.9	10.8	<<	Extensive education and/or training may be required
Administration and Management	8.4	14.4	8.2	<<	Extensive education and/or training may be required
Physics	4.3	13.0	7.0	<<	Extensive education and/or training may be required
Building and Construction	4.0	10.7	15.1	>>	Current knowledge level is likely more than sufficient
Production and Processing	6.0	10.7	3.7	<<	Extensive education and/or training may be required
Personnel and Human Resources	5.6	10.4	3.2	<<	Extensive education and/or training may be required
Economics and Accounting	4.4	8.1	3.2	<<	Extensive education and/or training may be required
Telecommunications	3.9	7.4	3.1	<<	Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 83

Focus Occupation: Civil Engineering Technicians (17-3022)

Associated Occupation: Architectural and Engineering Managers (11-9041)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Operations Analysis	5.0	13.9	7.9	<<	Extensive development of skills in this area may be required
Coordination	9.1	13.3	8.2	<<	Extensive development of skills in this area may be required
Complex Problem Solving	9.1	13.0	9.4	<<	Extensive development of skills in this area may be required
Time Management	8.9	12.8	8.6	<<	Extensive development of skills in this area may be required
Management of Personnel Resources	6.9	12.2	6.9	<<	Extensive development of skills in this area may be required
Mathematics	6.2	11.7	8.7	<<	Extensive development of skills in this area may be required
Systems Analysis	6.5	10.7	6.9	<<	Extensive development of skills in this area may be required
Systems Evaluation	6.4	10.7	6.6	<<	Extensive development of skills in this area may be required
Negotiation	6.8	10.2	6.7	<<	Extensive development of skills in this area may be required
Management of Financial Resources	3.3	9.7	4.4	<<	Extensive development of skills in this area may be required
Management of Material Resources	3.7	9.2	4.3	<<	Extensive development of skills in this area may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities

Similarity of Focus Occupation to Associated Occupation: 95

Focus Occupation: Civil Engineering Technicians (17-3022)

Associated Occupation: Architectural and Engineering Managers (11-9041)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Written Comprehension	11.0	15.2	11.4	<<	Extensive improvement in abilities may be required
Oral Comprehension	12.5	15.0	12.8	<	Some improvement in abilities may be required
Deductive Reasoning	10.6	13.9	11.4	<	Some improvement in abilities may be required
Problem Sensitivity	11.1	13.9	10.8	<<	Extensive improvement in abilities may be required
Written Expression	9.8	13.8	11.4	<	Some improvement in abilities may be required
Mathematical Reasoning	6.3	13.3	10.3	<<	Extensive improvement in abilities may be required
Information Ordering	9.9	12.0	10.3	<	Some improvement in abilities may be required
Category Flexibility	9.0	11.4	9.4	<	Some improvement in abilities may be required
Number Facility	6.3	11.2	9.2	<	Some improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 76

Focus Occupation: Civil Engineering Technicians (17-3022)
Associated Occupation: Architectural and Engineering Managers (11-9041)

Work Activities	Exclusivity of Activity
Communicate technical information	4
Conduct land surveys	81
Confer with engineering, technical or manufacturing personnel	25
Estimate cost for engineering projects	69
Estimate time needed for project	64
Evaluate costs of engineering projects	70
Evaluate engineering data	60
Prepare technical reports or related documentation	22
Read blueprints	10
Read technical drawings	7
Resolve engineering or science problems	46
Understand engineering data or reports	48
Understand technical operating, service or repair manuals	6
Use scientific research methodology	21
Use technical regulations for engineering problems	61

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus
Occupation to Associated
Occupation: 54

Focus Occupation: Civil Engineering Technicians (17-3022)
Associated Occupation: Architectural and Engineering Managers (11-9041)

Tools and Technologies	Exclusivity
Computer data input devices	2
Computers	1
Content authoring and editing software	1
Electrochemical measuring instruments and accessories	9
General laboratory glassware and plasticware and supplies	13
Indicating and recording instruments	2
Industry specific software	1
Information exchange software	1
Laboratory heating and drying equipment	13

Network applications software	1
Safety apparel	4
Temperature and heat measuring instruments	6
Vision protection and accessories	3

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.